

Abstract of the Disclosure

A solid electrolyte including a composition represented by Formula 1 below is provided: $a\text{Li}_2\text{O}-b\text{B}_2\text{O}_3-c\text{M}-d\text{X}$ (1) wherein M is at least one selected from the group consisting of TiO_2 , V_2O_5 , WO_3 , and Ta_2O_5 ; X is at least one selected from LiCl and Li_2SO_4 ; $0.4 < a < 0.55$; $0.4 < b < 0.55$; $0.02 < c < 0.05$; $a+b+c=1$, and $0 \leq d < 0.2$. A method for preparing the solid electrolyte and a battery using the solid electrolyte are also provided. The solid electrolyte exhibits high ionic conductivity. Lithium and thin film batteries using the solid electrolyte are improved in charge/discharge rate, power output, and cycle life.